

AMENDMENTS TO THE CLAIMS

The following is a complete listing of the revised claims with a status identifier in parenthesis.

List of Claims

1. (Currently Amended) A method for monitoring whether a mobile subscriber station is operating in an authorized area of the mobile subscriber station, the method comprising:

monitoring an operational composite fingerprint of the mobile subscriber station; and

comparing the operational composite fingerprint to a characteristic composite fingerprint of the mobile subscriber station to determine if the mobile subscriber station is operating within the authorized area; the characteristic composite fingerprint being associated with the authorized area.

2. (Currently Amended) The method according to claim 1 further comprising, prior to the comparing step, the step of defining the characteristic composite fingerprint for the mobile subscriber station associated with operating in the authorized area.

3. (Currently Amended) The method according to claim 2 wherein the defining step comprises organizing a first histogram of observations of propagational delays associated with a reverse link transmission of the mobile subscriber station from the authorized area.

4. (Currently Amended) The method according to claim 3 wherein the defining step comprises organizing a second histogram of antenna observations per antenna set associated with the reverse link transmission of the mobile subscriber station from the authorized area.

5. (Currently Amended) The method according to claim 2 wherein the defining step comprises organizing a probability density function of probability versus propagational delays associated with a reverse link transmission of the mobile subscriber station from the authorized area.

6. (Currently Amended) The method according to claim 2 wherein the defining step comprises grouping propagational delay factors based on time differences of reference pseudo-random codes with respect to received pseudo-random codes, wherein the mobile subscriber station transmits on the reverse channel using the known reference pseudo-random code.

7. (Currently Amended) The method according to claim 1 wherein the monitoring step comprises the substeps of:

measuring a number of observations of different propagational delays within a measurement range during an uplink transmission of the mobile subscriber station;

measuring a number of antenna observations of receive signals, of the uplink transmission, detected on each distinct uplink antenna of a base station;

incrementing antenna set counters and counter bins associated with the corresponding observations in a first histogram of propagational delays and in a second histogram of antenna observations, respectively, to form the operational composite fingerprint for comparison to the characteristic composite fingerprint.

8. (Original) The method according to claim 7 wherein the monitoring step further comprises the substep of normalizing the first and second histograms.

9. (Currently Amended) The method according to claim 7 wherein the monitoring step further includes the substeps of:

determining a reference range about a central propagational delay factor associated with a corresponding strongest reverse channel signal strength for the mobile subscriber station for propagational delays observed at a beginning of the uplink transmission; and

establishing a smaller component counter and a larger component counter to track measured propagational delays that fall outside of a reference range to form the operational composite fingerprint for comparison to the characteristic composite fingerprint.

10. (Original) The method according to claim 7 further comprising making the observations based upon signal characteristics of mature finger assignments.

11. (Original) The method according to claim 7 further comprising attaining the observations from a signal searcher.

12. (Original) The method according to claim 1 wherein the comparing step further comprises determining if a first histogram of measured propagational delay factors fall within a propagational delay mask.

13. (Original) The method according to claim 12 wherein the comparing step further comprises determining if a second histogram of measured observations of antenna sets falls within an antenna mask.

14. (Currently Amended) The method according to claim 1 wherein the comparing step further comprises determining that the mobile subscriber station is most likely operating within

the authorized area if a first histogram of measured propagational delay factors falls within a propagational delay mask and if a second histogram of measured observations of antenna sets falls within an antenna mask.

15. (Currently Amended) The method according to claim 1 wherein the comparing step further comprises determining that the mobile subscriber station is operating in the restricted coverage area if a first histogram of measured propagational delay factors falls outside of a range defined by a propagational delay mask or if a second histogram of measured observations of antenna sets falls outside of a range defined by an antenna mask.

16. (Currently Amended) The method according to claim 1 wherein the comparing step further comprises determining that the mobile subscriber station is most likely operating within the authorized area if a first statistical representation of measured observations falls within an antenna mask and if a second statistical representation does not exceed a maximum outside prominent characteristic of measured observations of propagational delays.

17. (Currently Amended) The method according to claim 1 wherein the comparing step further comprises determining that the mobile subscriber station is operating in the restricted area if a first statistical representation of measured propagational delay factors falls outside of a range defined by a propagational delay mask or if a second statistical representation of the measured propagational delay factors exceeds a maximum outside prominent characteristic of measured occurrences of propagational delays.

18. (Currently Amended) A system for monitoring whether a mobile subscriber station is operating in an authorized area of the mobile subscriber station, the system comprising:

a monitor for monitoring an operational composite fingerprint of the mobile subscriber station; and

a processor for comparing the operational composite fingerprint to a characteristic composite fingerprint of a mobile subscriber station to determine if the mobile subscriber station is operating within the authorized area; the characteristic composite fingerprint being associated with the authorized area.

19. (Currently Amended) The system according to claim 18 further comprising a storage device for storing the characteristic composite fingerprint for a mobile subscriber station associated with operating in the authorized area.

20. (Currently Amended) The system according to claim 18 wherein the monitor comprises an antenna monitor for monitoring the number of temporally offset receive signals, originating from a transmission of the mobile subscriber station, incident upon each distinct uplink antenna set of a base station.

21. (Currently Amended) The system according to claim 18 wherein the monitor comprises a propagational delay measurer for measuring the propagational delays of temporally offset receive signals originating from a transmission of the mobile subscriber station.

22. (Currently Amended) The system according to claim 18 wherein the characteristic composite fingerprint includes a first histogram of observations of propagational delays

associated with a reverse link transmission of the mobile subscriber station from the authorized area.

23. (Currently Amended) The system according to claim 22 wherein the characteristic composite fingerprint includes a second histogram of antenna observations per antenna or per antenna set for the reverse link transmission of the mobile subscriber station from the authorized area.

24. (Currently Amended) The system according to claim 18 wherein the characteristic composite fingerprint includes a probability density function of probability versus propagational delays associated with a reverse link transmission of the mobile subscriber station from the authorized area.

25. (Currently Amended) The system according to claim 18 wherein the characteristic composite fingerprint includes propagational delay factors based on time difference between a reference pseudo-random code and a received pseudo-random code, wherein the mobile subscriber station transmits on a reverse channel using the reference pseudo-random code.
